

SVEC, V.

Experimental tests with *Pasteurella pseudotuberculosis* strain 740
on rabbit eyes. Cesk. ofth. 17 no. 3:220-227 My '61.

1. Okni. klinika UP v Olomouci, prednosta prof. MUDr. V. Vejdovsky.

(PASTEURELLA infect) (UVEITIS exper)

STEIDL, L.; SVEC, V.; KLAPESTEK, J.

A rare case of tumor of the temporal lobe with symptoms of intrasellar expansive process (neuro-ophthalmological study). Cesk. ofth. 17 no. 4/5:252-259 Jl '61.

1. Neurologicka klinika PU v Olomouci, prednosta prof. MUDr. J. Hrbek
Ocni klinika PU v Olomouci, prednosta prof. MUDr. V. Vejdovsky.

(BRAIN NEOPLASMS case reports)
(TEMPORAL LOBE neoplasms)
(GLIOBLASTOMA MULTIFORME case reports)
(SELLA TURCICA neoplasms)
(EYE pathology)

HEINC, A.; SVEC, V.

Fistula of the orbit and dermoid. Cesk. ofth. 17 no. 6:436-440 S '61.

1. Ocni klinika lek. fakulty PU v Olomouci, prednosta prof. MUDr.
Vaclav Vejdovsky, Dr. Sc.

(ORBIT neoplasms)
(TERATOID TUMOR in inf & child)

SVEC, V.; VYKYDAL, M.; JORDA, V.

Eyes in antimalarial therapy. Cas.lek.cesk 100 no.46:1451-1454
17 N '61.

1. Ocni klinika PU v Olomouci, prednosta prof. dr. V. Vejdovsky. I
interni klinika PU v Olomouci, prednosta prof. dr. P. Lukl. Dermatologicka
klinika PU v Olomouci, prednosta prof. dr. G. Lejhanec.

(ANTIMALARIALS ther) (EYE pharmacol)

SVEC, V.; VYKYDAL, M.; ZIZKA, Z.

Possibilities of the use of antimalarials in ophthalmology (Preliminary report). Cesk. oftal. 18 no.4:293-296 Jl '62.

1. Ocní klinika lek. fak. PU v Olomouci, prednosta prof. dr. V. Vejdovský
I interní klinika lek. fak. PU v Olomouci, prednosta prof. dr. P. Lukl
Mikrobiologicky ustav lek. fak. PU v Olomouci, prednosta doc. dr. E.
Marsalek.

(ANTIMALARIALS therapy)
(OPHTHALMOLOGY therapy)

SVEC, V.; VYKYDAL, M.

On the "rheumatic" etiology of inflammation of the uvea. Cesk. oftal.
18 no.4:304-305 J1 '62.

1. Ocni klinika lekarske fakulty Palackeho university v Olomouci,
prednosta prof. dr. V. Vejdovsky, DrSc. I interni klinika lekarske
fakulty Palackeho university v Olomouci, prednosta prof. dr. P. Lukl.

(UVEITIS etiology) (RHEUMATISM physiol)
(RHEUMATIC FEVER physiol)

ZITNAN, D.; SVEC, V.; NIEPEL, G.

Incidence of the LE phenomenon in systemic lupus erythematosus and other collagen diseases based on longitudinal observations for several years. Bratislavské lekárske listy 2 no. 1847-59 '64

1. Vyskumny ustav reumaticich chorob v Piestanoch; veduci: doc.
MUDr. S.Sitaj.

Z/032/60/010/04/006/035
E073/E335

AUTHOR: Švec, V.L., Engineer

TITLE: On the Calculation of Components Operating Under
Periodically Variable Loads

PERIODICAL: Strojírenství, 1960, Vol 10, Nr 4, pp 261 - 267

ABSTRACT: The author criticises conventional methods used by designers in calculating components and the way in which safety coefficients are used in such calculations. Various correction factors generally introduced into the equations do not correspond to actual conditions, particularly in the case of components operating under periodically fluctuating loads. Approximate calculations, which are generally used for this purpose, result in excessive dimensioning. The author proposes a method which corresponds more closely to the actual loading conditions and in his calculations he takes into consideration that one type of stress may be counteracted by another type of stress. Furthermore, instead of the conventional definition of the safety factor as the ratio of the maximum critical cycle stress to the maximum stress during operation, the author proposes using

Card1/2

SVEC, Z. REZNICEK, J.

Phosphors sensitive to infrared radiation. p. 296.

(Slaboproudý Obzor. Vol. 18, no. 5, May 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

STEG, ZDENEK

6

7

Automatic fraction collector for column chromatography

John Holoubek, Charles Mikal, Roman Matus, Josef

Department of Chemistry, Faculty of Technology and Nuclear Sciences, Czechoslovakia

Received by the Royal Society of Chemistry, 1986, from the authors.

The collectors of the fractions are

described in the paper. The significance of the

L 21074-65 EWT(1)/EFC(b)-2 IJP(c)/AFWL/AS(mp)-2/AFGC(b)/ESD(gs)/ESD(t)
ACCESSION NR.: AP5001420 G/0030/64/007/003/K161/K162
(2)

AUTHORS: Svec, Z.; Mravinac, J.

B

TITLE: Luminescence of quenched ZnS:Cu phosphors

SOURCE: Physica status solidi. v. 7, no. 3, 1964, K161-K162

TOPIC TAGS: luminescence, luminor, quenched phosphor, zinc sulfide
optic material, color center

ABSTRACT: The authors investigated the luminescence of quenched phosphors prepared by firing mixtures of ZnS (containing up to 1% Cu) to which copper was added (1×10^{-5} - 5×10^{-3} g Cu per g ZnS) in a stream of $H_2S + N_2$ (1:1) for 45 minutes. After cooling, the samples were quenched in water or in ethanol cooled by dry ice. Samples containing more than 1×10^{-3} g Cu per g ZnS exhibited yellow or orange luminescence, compared with the green luminescence observed at lower concentrations.

APPROVED FOR RELEASE 08/31/2001 CIA-RDP86-00513R001654110008-5

Card 1/3

L 21074-65

ACCESSION NR: AP5001420

citation in the original powders after quenching in the cooled methyl alcohol. Strong changes in the color of the emission were observed also when the quenched phosphors were reheated (100 to 300C for 1/2 to 40 hours). Similar results were obtained when aluminum was added or when the firing temperature was above the transition point. The results indicate that the high temperature equilibrium of the ZnS:Cu(Cl) system, frozen-in by quenching, is characterized by the usual green luminescence. Conversion to low-temperature equilibrium during the annealing proceeds in two stages, accompanied by an increase in the concentrations of the "red" and color centers and by precipitation of copper on the surface and within the crystal. The results are somewhat different from those obtained by Presland et al. (J. Electrochem. Soc. v. 111, 168, 1964), and the work is being continued. Orig. art. has: 1 figure.

ASSOCIATION: Research Institute for Vacuum Electrotechnics, Prague,
Czechoslovakia.

Card 2/3

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001654110008-5

L 21074-65

ACCESSION NR: AF5001420

SUBMITTED: 11Nov64

SUB CODE: OP, SS

NR REF Sov: 000

ENCL: 00

OTHER: 001

Card 3/3

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001654110008-5"

L 31779-66 IJP(c)

ACC NR: AP6021652

SOURCE CODE: CZ/0039/65/026/008/0480/0483

AUTHOR: Svec, Zdenek; Mravinac, Josef

54

B

ORG: Svec Research Institute of Electrical Engineering Ceramics, Hradec Kralove
(Vyzkumny ustav elektrotechnicke keramiky); Mravinac Research Institute of Vacuum
Electrical Engineering, Prague (Vyzkumny ustav vakuove elektrotechniky)

TITLE: Preparation of Zn(S, Se)-Cu electroluminescent phosphor

SOURCE: Slaboproudny obzor, v. 26, no. 8, 1965, 480-483

TOPIC TAGS: phosphor, chemical reaction, zinc sulfide, electroluminescence, chemical technique, emission spectrum, selenic acid

ABSTRACT: The article reports a method of preparing directly Zn(S, Se)-Cu electroluminescent phosphor, based on the reaction of zinc sulfide with selenious acid. By selecting the proper initial mixture, heat treatment and final treatment of the product in an anhydrous environment, electroluminescent phosphors with a maximum reaching 640 nm in the emission spectrum have been produced. Orig. art. has: 3 figures. JPRS

SUB CODE: 07, 20/ SUBM DATE: 22Sep64/ ORIG REF: 001/SOV REF: 001/ OTH REF: 002

LS

Card 1/1

UDC: 535.37.002.3:546

SVECENSKI, Branko, sanitetski pukovnik docent dr; STOJIC,
Ljubomir, psiholog

Some psychological and psychiatric aspects of the reaction of
the population to an earthquake. On the 1962 earthquake.
Vojnosanit. pregl. 20 no.8:481-488 Ag '63.

1. Vojnomedicinska akademija u Beogradu. Institut za primenjenu
psihologiju i mentalnu higijenu.
(DISASTERS) (PSYCHOLOGY) (PSYCHIATRY)
(SOCIOLOGY)

S

SVEĆENSKI, Branko, srpski pukovnik dr. dr., Vojnomedicinska akademija, Srbija, psiholog

Role of normal and pathological personalities of drivers.
Vojnosanit Pregl. 20 no.11:691-699 N '63.

1. Vojnomedicinska akademija u Beogradu, Institut za primenjenu
psihologiju i mentalnu higijenu.

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001654110008-5

SVECENSKI, Branko, sanit.puk.doc.dr.

A method for teaching mental hygiene in military medical schools. Vojnosanit. pregl. 20 no.12:760-764 D'63

*

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001654110008-5"

SVECIENSKI, Branko, sanitetski pukovnik doc. dr.

Contribution to the study of mental reactions of the population
during the catastrophic earthquake in Skopije. Vojnosanit Pregl.
21 no.2:115-117 F '64.

JOVANOVIC, M.M.; SVECENSKI, N.B.

The effect of X-irradiation on the transminase activity in
tissues of infantile rats. Bul Inst Nucl 14 no.1:53-56 Ja '63.

1. Department of Radiobiology of the Boris Kidric Institute of
Nuclear Sciences.

Svecharnik, D.V.
SVECHARNIK, D.V.

Problem of the optimum of nominals in probability calculations.
Trudy Inst. mash. Sem. po tozh. v mash. i prib. no.10:78-94 '57.
(Distribution (Probability theory)) (MIRA 11:1)

AUTHORS: Rakovskiy, M.Ye., Svecharnik, D.V. 119-58-5-2/11

TITLE: Problems of Technical Policy and the Main Directions in the Extension of Machine Building and Means of Automation (Voprosy tekhnicheskoy politiki i osnovnyye napravleniya v razvitiu priborostroyeniya sredstv avtomatizatsii)

PERIODICAL: Priborostroyeniye, 1958, Nr 5, pp. 3-7 (USSR)

ABSTRACT: Solving the task of mechanization and automation in industry cannot be attained by an increase of the number of construction offices and new factories which produce the parts necessary for automation. It is, however, of decisive importance that in Soviet production a sudden improvement of the quality of the devices for automation will have to take place.
It cannot be explained, for instance, why the number of pH-meters produced is so small that they are not available in large numbers for agriculture, although their extensive use would increase soil productivity considerably.
Investigation of the various branches of the instrument-producing industry makes it clear that, if instruments are built at all, unification cannot be found to exist anywhere.

Card 1/2

Problems of Technical Policy and the Main Directions
in the Extension of Machine Building and Means of
Automation

119-58-5-2/11

It is obvious that standardization of the automation projects and unification of the means for automation are equally effective for the entire political economy as standardization of the projects and unification of the elements in building. One point has still to be stressed: It must be the aim of all improvements considerably to increase the average life of a instrument, which causes an increase of production capacity.

AVAILABLE: Library of Congress

1. Industry--USSR 2. Industry--Automation

Card 2/2

28(1);8(2)

PHASE I BOOK EXPLOITATION

SOV/2667

Svecharnik, David Veniaminovich

Distantionnyye peredachi (Remote Transmissions) Moscow, Gosenergoizdat,
1959. 311 p. Errata slip inserted. 10,000 copies printed.

Ed.: S.P. Kolosov; Tech. Ed.: G.Ye. Larionov.

PURPOSE: This book is intended for specialists in industrial instrument-making working with remote transmission systems in shops and plants. It may also be useful to instrument designers and specialists in automatic and remote control and students taking courses in these fields.

COVERAGE: The author discusses the basic theory of remote control transmission and describes multiloop transmission systems. He analyzes system accuracy and discusses methods of synthesizing pneumatic and hydraulic selsyns, contactless d-c selsyns, selsyns using radiant of radiation, selsyns for transmitting rectilinear displacements, etc. He discusses circuits which make it possible to obtain approximate and accurate readings simultaneously and describes theoretical principles and circuits of selsyn systems with torque amplification. He also discusses circuits of new contactless selsyns.

Card 1A

10(1), 10(4)

SOV/119-59-9-18/19

AUTHOR:

Svecharnik, D. V., Candidate of the Technical Sciences

TITLE:

Useful Data on the Constructional Elements of Automation

PERIODICAL:

Priborostroyeniye, 1959, Nr 9, p 31 (USSR)

ABSTRACT:

The book by S. P. Kolosov "Elementy aviatsionnykh avtomaticheskikh ustroystv" ("The Elements of Automatic Devices Used in Aviation") Oborongiz (State Publishing House for Defence), 1958, discussed in the present paper, contains useful data on the calculation and developing methods of accessories of automation, such as the ones applied in automatic steering mechanisms in aviation. This book might be of interest to all specialists employed in the general industrial manufacture of apparatus. It is fully suitable for automatic devices of the stationary industrial types, since it reports on the general construction principles and on the mathematical considerations on the constructional elements of automation, such as are applied in the various fields of engineering. A special feature of this book is the investigation of the electric elements connected with supply at higher frequencies (400 cycles) and the analysis of the temperature stability in a wide temperature interval. This is particularly

Card 1/2

ATSYUKOVSKIY, Vladimir Akimovich; SVECHARNIK, D.V., red.; VORONIN, K.P.,
tekhn.red.

[Capacitative differential displacement transmitters] Emkostnye
differentsial'nye datchiki peremeshcheniya. Moskva, Gos.energ.
izd-vo, 1960. 100 p. (Biblioteka po avtomatike, no.12).
(MIRA 13:?)

(Automatic control) (Transducers)

SVECHARNIK, D. V., Doc Tech Sci, "MULTIBYPATH SYSTEMS
OF LONG-DISTANCE TRANSMISSIONS OF ANGULAR AND LINEAR MI-
GRATIONS." MOSCOW, 1961. (ACAD SCI USSR, INST OF AUTO-
MATION AND TELEMECHANICS). (KL, 3-61, 212).

L 19005-63

BDS/ENT(d)/EEC(b)-2

AFFTC/ASD/ESD-3/RADC/APGC/IJP(C)

Pg-4/Pk-4/Pl-4/Pm-4/Po-4/Pq-4 BC

ACCESSION NR: AP3002488

S/0119/63/000/006/0010/0014 *X B*AUTHOR: Burtsev, V. K.; Svecharnik, D. V.

TITLE: Reliability and effectiveness of automatic control and regulation systems

SOURCE: Priborostroyeniye, no. 6, 1963, 10-14

TOPIC TAGS: reliability, effectiveness, automatic control, automatic regulation

ABSTRACT: Suggestions for evaluating reliability and effectiveness of automatic-control equipment and systems are made. This formula is offered for computing the effectiveness

$$E = \frac{B_t - C_e - C_l}{B_t}$$

where B is the system productivity in rubles/year, C_e is the cost of developing and operating the system, C_l is loss caused by the system failure to operate, t is time of operation. The ratio T/T_0 , where T is the average time between two consecutive failures of the system and T_0 is same of a "standard" system, is said to be "a measure of progress in increasing the reliability." A system-cost vs.

Card 1/2

L19005-63

ACCESSION NR: AP3002488

reliability curve is developed with an "optimum reliability" point on it. Further, outages, time of restoration of operability, and their influence on the effectiveness are analyzed. An example is given of computing reliability of an automatic-control system including a transistorized amplifier; Poisson distribution is used. Orig. art. has: 4 figures, 18 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 12Jul63

ENCL: 00

SUB CODE: IE

NO REF SOV: 015

OTHER: 000

Card 2/2

ACCESSION NR: AP4041337

S/0119/64/000/006/0011/0014

AUTHOR: Mironov, V. D.; Svecharnik, D. V.

TITLE: Electronic system of supervision and control instruments

SOURCE: Priborostroyeniye, no. 6, 1964, 11-14

TOPIC TAGS: industrial automation, automatic control, EAUS instrument, supervisory control, electronic automatic control instrument

ABSTRACT: The electronic unit standardized system (EAUS - Soviet abbreviation) includes sensors, transducers, controllers, actuators, indicators, recorders, final amplifiers, and signaling devices intended for industrial-process supervision and automatic control. The instruments are designed for a standardized d-c signal 0(0.5)-5 ma. Two structural diagrams of EAUS application are shown in Enclosure 1. Controlling instruments are manufactured in two types: a relay controller with a variable-duration constant-height output signal and an analog

Card 1/3

ACCESSION NR: AP4041337

controller with a variable output signal (operating characteristics of the controllers are tabulated). Special "correcting devices" are provided for converting signals from various sensors into the standard d-c signal. Also, these additional electronic devices are designed: a differentiator, a synchronizer, a limiter, a copying power amplifier, a manually-controlled initiating element, and a dynamic coupling. The system permits an easy matched connection with AUS pneumatic devices. A few applications of the EAUS system are indicated.
Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut teploenergeticheskikh priborov
(Scientific Research Institute of Heat-Power Instruments)

SUBMITTED: 00

ENCL: 01

SUB CODE: IE

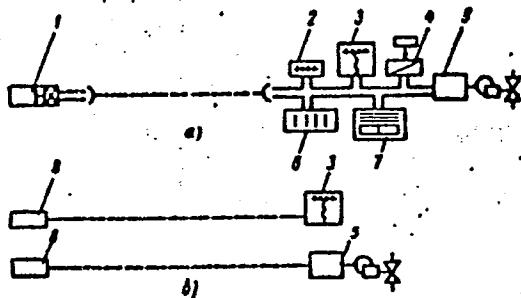
NO REF SOV: 000

OTHER: 000

Card 2/3

ACCESSION NR: AP404 1337

ENCLOSURE: 01



Structural diagrams of EAUS

- (a) One info source feeds all secondary devices;
- (b) Two sources of information.

1 - Standardized-signal sensor; 2 - secondary indicating instrument;
3 - secondary recorder; 4 - secondary signaling device; 5 - controller;
6 - centralized supervision apparatus; 7 - electron controller;
8 - sensors. (In the "b" case, the standardized signal is not always
desirable as it may complicate the system and impair its reliability).

Card 3/3

L 5311-66 EWT(d)/EWP(1) LJP(c) BC

ACC NR: AP5025695

SOURCE CODE: UR/0286/65/000/018/0043/0044

INVENTOR: Svecharnik, D. V.; Rotinyan, M. I.; Shidlovich, L. Kh.; Pavlenko, V. A.;
Kelim, Yu. M.

ORG: none

TITLE: Servosystem driven with d-c signals [Announced by the Scientific Research
Institute of Heat- and Power-Engineering Equipment (Nauchno-issledovatel'skiy institut
teploenergeticheskogo priborostroyeniya). Class 21, No. 174687]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 43-44

TOPIC TAGS: signal processing, signal analysis, data processing equipment

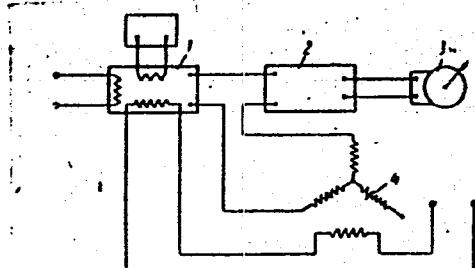
ABSTRACT: This Author Certificate introduces a servosystem driven with d-c signals
(see figure). For simplicity and improved reliability, the stator winding of the

Fig. 1. Signal converter

- 1 - Push-pull magnetic modulator;
2 - a-c power amplifier; 3 - re-
versible motor; 4 - feedback pickup.

UDC: 62-503.53
62-523.2

09010784

Card 1/2

E 5311-66

ACC NR: AP5025695

transmitting selsyn and the power supply winding of the magnetic modulator are series connected, while the winding of the selsyn rotor is connected in series with the modulator output. Orig. art. has: 1 figure. [DW]

SUB CODE: IE, EE SUBM DATE: 18May64/ ATD PRESS: 4135

6C
Card 2/2

L 23617-66 EWT(1)

ACC NR: AP6009518

(A)

SOURCE CODE: UR/0413/66/000/005/0039/0039

AUTHOR: Ivanov, B. S.; Svecharnik, D. V.

462
B

ORG: none

TITLE: A controlled two-phase asynchronous micromotor. Class 21, No. 179374

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 39

TOPIC TAGS: electric motor, positive feedback

ABSTRACT: This Author's Certificate introduces: 1. A controlled two-phase asynchronous micromotor based on Author's Certificate No 117302 with split poles in the controlled phase. There are openings in sections of the split poles with crosspieces which support the control winding. The control power is reduced and the amplification factor of the control signal is held constant by making the control windings from two branches connected in antiparallel through diodes. These branches each contain two coils which are located on alternate sections of the poles for the controlled phase. 2. A modification of this micromotor in which two positive feedback windings are used. Each of these windings consists of two coils which are located on the crosspieces of alternate sections of the poles.

SUB CODE: 09/ SUBM DATE: 21Aug64/ ORIG REF: 000/ OTH REF: 000

UDC: 621.313.333.2
.025.2-181.4

Card 1/1 *ds*

SVECHIN, K. B.

"Investigation of Certain External Factors of the Individual Development of Animals,"
Thesis for degree of Dr Agricultural Sci. Sub 19 Jun 50, Moscow Fur (and Felt) Inst

Summary 71, 4 Sept 52. Dissertations Presented for Degrees in Sciences and
Engineering in Moscow in 1950. From Vechernaya Moskva, Jan-Dec 1950.

SVECHIN, K. B.

Candidate of Agricultural Sciences, Dnepropetrovsk Agricultural Institute.

"Light conditions of maintenance and reproductive functions of animals."

SO: HYGIENE OF AGRICULTURAL ANIMALS, Proceedings of the XXIX Plenum of the Veterinary Section of the Academy, P. 101, Moscow, 1950, Trans. 191, by L. Lulich.

uncl

1. SVECHIN, K. B.
 2. USSR (600)
 4. Light-Physiological effect
 7. Material for studying methods for picking up radiant energy and its effect on the animal organism. Trudy Knepr. sel'khoz. inst. 4 1951
9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

SVECHIN, K.B.

Diurnal rhythm of physiological function in cattle maintained in the open
and in stalls. J. Physiol. USSR, '52, 38, 319-325. (MIRA 5:6)
(BA - A.III Mr '53:315)

SVERCHIN, K.B.

SVERCHIN, K.B., doktor, sel'skokhozyaystvennykh nauk, professor; VENKOVA, G.I.,
redaktor; DEREVYANKO, G.S., tekhnicheskiy pedaktor.

[Growth and development of farm animals] Rost i razvitiye sel'sko-
khozaiystvennykh zhivotnykh. Kiev, Gos.Izd-vo sel'khoz.lit-ry,
USSR, 1956. 213 p.
(Domestic animals)

SVECHIN, K.B.

SVECHIN, K.B., prof., doktor sel'skokhozyaystvennykh nauk.

Authority in science and disparaging practices of undermining it
("Fundamentals of the raising of purebred dairy cattle" by E.A.
Novikov. Reviewed by K.B. Svechin). Zhivotnovodstvo 20 no.2:93-95
F '58. (MIRA 11:1)

(Dairy cattle breeding)
(Novikov, E.A.)

USSR/Farm Animals. General Problems.

Q-1

Abs Jour: Ref Zhur - Biol., No 22, 1958, 101139

Author : Svechin, K.B.

Inst : Institute of Animal Morphology, AS USSR

Title : Embryonal Growth and Development Characteristics in Swine, Cattle, and Rabbits with Various Types and Levels of Feeding.

Orig Pub: Tr. In-ta morfol. zhivotnykh. AN SSR, 1957,
vyp. 22, 74-90

Abstract: Studies of embryonal growth of swine, cattle, and rabbits prove the existence of typical characteristics in the animals' development and its dependence upon type and level of feeds the female animals receive during the time of their being prepared for mating and

Card 1/3

2

SVECHIN, Kirill Borisovich [Sviechin, K.B.], prof.; KOLESNIK, M.M.,
doktor biolog.nauk, glavnnyy red.

[Early maturity of farm animals] Skorospilist' sil's'ko-
hospodars'kykh tvaryn. Kyiv, 1959. 39 p. (Tovarystvo dlia
poshyrennia politychmykh i naukovykh znan' URSR. Ser.6, no.4)
(MIRA 12:5)

(Stock and stockbreeding)

SVECHIN, K.B. [Sviachyn, K.B.], doktor sel'skokhozyaystvennykh nauk,
prof.

How we can increase meat production. Mauka i zhyttia 10
no.2:29-31 F '60. (MIRA 13:6)
(Stock and stockbreeding)

SVECHIN, K.B.; LUBENETS, V.A.

"Origin and transformation of domestic animals" by S.N.Bogoliubskii.
Reviewed by K.B.Svechin, V.A.Lubenets. Usp. sovr. biol. 49 no.3:388-
390 My-Je '60. (MIRA 13:7)
(DOMESTIC ANIMALS) (BOGOLIUBSKII, S.N.)

SVECHIN, Kirill Borisovich [Sviechin, K.B.], prof.; BEREZOVOY, Anatoliy Semenovich [Berezovyj, A.S.], zootehnik; FAL'KO, Yu.G. [Fal'ko, Yu.H.], red.; MATVIICHUK, O.A., tekhn. red.

[How to breed animals for meat] Vyrashchuvannia tvaryn na m'iaso. Kyiv, 1961. 41 p. (Tovarystvo dlja poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.5, no.11) (MIRA 14:10)
(Stock and stockbreeding)

PSHENICHNYY, P.D.[Pshenychnyi, P.D.], akademik, red.; SVECHIN, K.B.
[Sviechin, K.B.], prof., red.; MAZUR, V.M., red.; VIDONYAK,
A.P., tekhn. red.

[Problems in livestock feeding; scientific papers of the
Department of Livestock Feeding] Pytannia hodivli sil'sko-
hospodars'kykh tvaryn; naukovi pratsi kafedry hodivli sil'-
s'kohospodars'kykh tvaryn. Kyiv, Vyd-vo Ukr. akad. sil'-
s'kohospodars'kykh nauk, 1961. 102 p. (MIRA 15:9)

1. Kiev. Ukrains'ka akademiia sil's'kohospodars'kykh nauk.
Uchibova chastyna. 2. Ukrainskaya akademiya sel'skokho-
zyaystvennykh nauk (for Pshenichnyy).

(Feeding)

SVECHIN, Kirill Borisovich, doktor sel'khoz. nauk, prof.; KOLESNIK,
N.N., red.; ZHELIKHOVSKIY, V.I., red.; VIDONYAK, A.P., tekhn.
red.

[Individual development of farm animals] Individual'noe raz-
vitie sel'skokhoziaistvennykh zhivotnykh. Kiev, Izd-vo
Ukrainskoi akad. sel'khoz.nauk, 1961. 406 p. (MIRA 15:2)

1. Chlen-korrespondent Ukrainskoy akademii sel'skokhozyaystven-
nykh nauk (for Kolesnik).
(Stock and stockbreeding) (Ontogeny)

SVECHIN, Kr.B., prof., otv. red.; KOLESNIK, N.N., red.; PSHENICHNYY, P.D., akademik, red.; TUGAY, L.N., kand. sel'khoz. nauk, red.; SHMATOK, Ye.G., kand. sel'khoz. nauk, red.; FEDIY, Ye.M., doktor biol. nauk, red.; MAZUR, V.N., red.; POTOTSKAYA, L.A., tekhn. red.

[Biological principles underlying increase in the meat quality of farm animals] Biologicheskie osnovy povysheniia miasnykh kachestv sel'skokhoziaistvennykh zhivotnykh; materialy konferentsii. Kiev, 1962. 164 p. (MIRA 16:10)

1. Kiev. Ukrains'ka akademiya sil's'kohospodars'kykh nauk.
2. Chlen-korrespondent Ukr. akademii sel'skokhozyaystvennykh nauk (for Kolesnik).
3. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk (for Pshenichnyy, Svechin)
(Stock and stockbreeding)

PSHENICHNYY, P.D., akademik, otv. red.; DAKHNOVSKIY, N.V., red.; KUTIKOV, S.I., doktor sel'khoz. nauk, red.; SVECHIN, K.B., prof., doktor sel'khoz. nauk, red.; KOVALENKO, N.A., kand. sel'khoz. nauk, red.; MOKEYEV, A.Ye., kand. sel'khoz. nauk, red.; MAZUR, V.N., red.; KVITKA, S.P., tekhn. red.

[Ways for increasing meat production; materials of a session]
Puti uvelicheniya proizvodstva miasa; materialy sessii. Kiev,
Izd-vo Ukrainskoi Akad. sel'khoz.nauk, 1962. 199 p.
(MIRA 15:7)

1. Kiyev. Ukrains'ka Akademiia sil's'kohospodars'kykh nauk.
2. Ukrainskiy nauchno-issledovatel'skiy institut ptitsevodstva, Chlen-korrespondent Ukrainskoy Akademii sel'skokhozyaystvennykh nauk (for Dakhnovskiy).
3. Ukrainskaya Akademiya sel'skokhozyaystvennykh nauk (for Pshenichnyy).
4. Nauchno-issledovatel'skiy institut zhivotnovodstva Lesostepi i Poles'ya USSR (for Kutikov).
5. Uchebnaya chast' Ukrainskoy Akademii sel'skokhozyaystvennykh nauk (for Svechin).
6. Poltavskiy nauchno-issledovatel'skiy institut svinovodstva (for Kovalenko).
7. Ukrainskiy nauchno-issledovatel'skiy institut zhivotnovodstva stepnykh rayonov im. M.F.Ivanova, "Askaniya-Nova" (for Mokeyev).

(Ukraine—Stock and stockbreeding)

SVECHIN, N.

SVECHIN, N.V.

Characteristics of concrete construction work in the hot and
dry summers of Central Asia. Trudy Inst.soor. AN Uz.SSR no.5:
45-52 '54.
(Soviet Central Asia--Concrete construction)

AKHVERDOV, Iosif Nikolayevich, doktor tekhn. nauk; SVECHIN, T.N.,
nauchnyy red.; FEDOROVA, T.N., red. izd-va; GOL'BERG, T.M.,
tekhn. red.

[Highly durable concrete; experimental and theoretical studies
in the technology of concrete] Vysokoprochnyi beton; eksperi-
mental'nye i teoreticheskie issledovaniia po tekhnologii betona.
Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. ma-
terialam, 1961. 161 p. (MIRA 15:3)

(Concrete)

SVECHIN, YU. K.

Cand Agr Sci, Diss -- "Types of builds of swine in connection with their yield".
Leningrad, 1961. 19 pp, 22 cm (Min of Agr RSFSR. Leningrad Agr Inst), 200 copies,
No charge (KL, No 9, 1961, p 186, No 24395). [61-51100]

SVECHINA, Ye.G.

New concepts of nursing in the field of physiotherapy. Med. sestra,
Moskva no. 9:22-24 Sept 1952. (GML 23:2)

1. Nurse. 2. Leningrad.

~~SVECHINA, Ye.G.~~

Paraffin therapy. Med. sestra, Moskva no.4:21-22 Apr 1953. (GLML 24:5)

1. Leningrad. 2. Use of paraffin in the treatment of burns.

BRAYNES, S.N.; NAPALKOV, A.V.; SVECHINSKIY, V.B.

[Scientific records; problems in neurocybernetics] Uchenye
zapiski; problemy neirokibernetiki. Moskva, Akad.med.nauk
SSSR, 1959. 109 p. (MIRA 13:3)
(CYBERNETICS) (BRAIN)

SVECHINSKIY, V.

B.

Scientific Notes: Problems of Cybernetics (By) S.M. Braynes, A. V. Napalkov,
and V.B. Svechinskiy. New York, U.S. Joint Publications Research Service, 1960
208 p. diagrs., tables. (JPRS: 5880) (OTS: 60-41, 639)
Translated from the original Russian: Uchenyye Zapiski: Problemy
Neyrokibernetiki, Moscow, 1959.
Bibliography: p. 196-208

69202

S/144/60/000/02/017/019
E031/E13516,6800
16,9500AUTHOR: Svechinskiy, V.B., StudentTITLE: A New Type of Learning AutomatonPERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Elektromekhanika, 1960, Nr 2, pp 157-164 (USSR)

ABSTRACT: The automaton under discussion is not to react initially in a previously defined manner on reception of irritants - its actions are random - but as time passes it interacts with the surrounding medium and it learns. Then the automaton responds to definite irritants with determined actions. If something changes in the surrounding medium the automaton forgets and begins to act in accordance with the new situation. Consider a set of irritants I_1, I_2, \dots, I_n , a set of actions of the automaton a_1, a_2, \dots, a_n , and a set of fortifying irritants N_1, N_2, \dots, N_n . A typical situation is assumed to be described by a chain of the form

$$I_k - a_1 - I_M - a_d - \dots - I_s - a_p - N.$$

Card 1/3 The learning of the automaton takes place "from the end", i.e. the triplet $I_s - a_p - N$ is considered first. ✓

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S/144/60/000/02/017/019
E031/E135

A New Type of Learning Automaton

The construction of the learning automaton leads to the two problems: 1) The problem of finding points in a discrete space given by sets of irritants, "effectors", and by the medium. 2) The problem of the temporal distinction of the irritants. The first problem can be solved by constructing an m by n matrix from the central cells. The process of learning and remembering chains is described, and then the problem of the temporal distinction is discussed. Thus the description of the automaton is built up, and it is seen that it differs from Culbertson's "robot with memory" in that whereas the "robot with memory" depends in its behaviour on the previous irritants and is fully determined, the behaviour of the automaton here described is fully determined by its interaction with its medium, no programme having been previously stored in it. The problem of constructing such an automaton arose to the physiologists Professor S.N. Braynes and Cand. Biol. Sc. A.V. Nabalkov of the Psychiatric Institute of the Academy of Sciences of the USSR (Institut psichiatrii akademii nauk SSSR) in ✓

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S/144/60/000/02/017/019
E031/E135

A New Type of Learning Automaton

connection with their study of the working of the frontal brain. The students of the Cibernetics Design Office of MEI under the leadership of Yu.N. Kushelev developed the circuit for such an automaton and this is briefly described. After a brief discussion of possible applications of the automaton, the paper concludes with a description of the electric circuits used. There are 8 figures and 2 Soviet references.

ASSOCIATION: Moskovskiy energeticheskiy institut
(Moscow Power Institute)

Card 3/3

SUBMITTED: October 23, 1959

✓

BRAYNES, S.N., prof.; NAPALKOV, A.V., kand.biol.nauk; SVECHINSKIY, V.B.
[Sviechyn's'kyi, V.B.], inzh. (Moskva)

Neurocybernetics. Nauka i zhyttia 10 no.5:16-20 My '60.
(MIRA 13:7)

(CYBERNETICS) (NERVOUS SYSTEM)

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001654110008-5

SVECHINSKY, V. B., NAPALKOV, A. V., BRAYNES, Samuil N.

"Principles of Data Processing on Learned Systems."

Report submitted for the Meeting of Technical Committee 6 (Learning Automats)
Communications Technical Society (German) Karlsruhe, West Germany, 13-14 April 1961

Inst. of Psychiatry, Moscow

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001654110008-5"

(7)

BUKHARIN, A. E., Moscow Institute of Radio Engineering and Electronics - "On designs for automatic recognition of patterns in noise" (Section III)
BRAJES, S. K., and SVACHINSKIY, V. N.
Biocybernetical Institute, University of Moscow - "Matrix structure in simulating of learning" (Section VII)
DOROSHIN, R. L., and TSYPAKOV, B. S., Moscow Institute of Radio Engineering and Electronics - "Information transmission with additional noise" (Section XI)
FLEYSHMAN, B. S., Moscow Institute of Radio Engineering and Electronics - "Basic theorems of the constructive information theory" (Section VIII)
NAPALKOV, A. V., Chair of Higher Nervous Activity, Moscow State University - "Mechanisms of the selection of useful and trustful information" (Section IX)

REPORT to be submitted for the International Symposium on Information Theory,
Brussels, Belgium, 3-7 Sep 1962

BRAYNES, Samuil Natanovich; NAPALKOV, Anatoliy Viktorovich;
SVECHINSKIY, Vladislav Borisovich; KULLANDA, K.M., red.;
BUL'DYAYEV, N.A., tekhn. red.

[Neurocybernetics] Neirokibernetika. Moskva, Medgiz, 1962. 171 p.
(MIRA 15:6)
(NERVOUS SYSTEM) (INFORMATION THEORY IN BIOLOGY)

IVANOV, A.Z.; KRUG, G.K.; KUSHELEV, Yu.N.; LETSKIY, E.K.; SVECHINSKIY, V.B.

Self-teaching control system. Trudy MGI no. 44:47-156 '62.
(MIRA 16:5)

(Automatic control)

KUSHELEV, YU. N.; SVECHINSKIY, V. B.

"The learning problems of humans and of automatic machines."

report to be submitted for the Conference on Problem of Cybernetics,
Karlsruhe, West Germany, 23-25 Apr 1963

ERAYNES, S. N., Prof., SVECHINSKIY, V. B.

"Elements of a general theory of control in organisms."

Report submitted at the 3rd International Congress of Cybernetic Medicine,
(International Society of Cybernetic Medicine), Naples, Italy, 21-24 Mar 64.

VAYNSHTEYN, G.G. (Moskva); SVECHINSKIY, V.B. (Moskva)

Theory of a generator of random numbers. Izv. AN SSSR.
Tekh. kib. no.4:202-208 Jl-Ag '63. (MIRA 16:11)

BRAYNES, S.N.; SVECHINSKIY, V.B..

Elements of a general theory of the control in the body.
(MIRA 17:6)
Eksp. khir. i anest. 8 no.5:3-8 S-D '63.

1. Institut khirurgii imeni A.V. Vishnev'skogo (direktor -
deystvitel'nyy chlen AMN SSSR prof. A.A. Vishnevskiy)
AMN SSSR.

SAPOZHNIKOV, Rostislav Alekseyevich; BESSONOV, Aleksandr
Andreyevich; SHOLOVITSKIY, Adrian Grigor'yevich;
TEMNIKOV, F.Ye., prof., retsenzent; TIMOFEEV, V.A.,
prof., retsenzent; SVECHINSKIY, V.B., retsenzent;
IVANOV, A.Z., retsenzent; KHRUSTALEVA, N.I., red.

[Reliability of automatic control systems] Nadezhnost'
avtomaticheskikh upravliaiushchikh sistem. Moskva,
Vysshiaia shkola, 1964. 263 p. (MIRA 17:12)

YEPIFANOV, Aleksandr Dmitriyevich; KRUG, G.K., kand. tekhn. nauk,
dots., retsenzent; SVECHINSKIY, V.B., inzh., retsenzent;
CHERVONYY, A.A., doktor tekhn. nauk, prof., nauchn. red.

[Reliability of automatic control systems] Nadezhnost' av-
tomaticheskikh sistem. Moskva, Mashinostroenie, 1964.
(MIRA 18:1)
335 p.

ACCESSION NR: AP4036511

S/0103/64/025/005/0685/0691

AUTHOR: Svechinskiy, V. B. (Moscow)

TITLE: Self-correcting designs of finite automata

SOURCE: Avtomatika i telemekhanika, v. 25, no. 5, 1964, 685-691

TOPIC TAGS: automatic control, automaton, finite automaton, self correcting automaton, automatic control reliability

ABSTRACT: A method is advanced for synthesizing self-correcting automata which include a storage with a sufficiently low error and a rather small redundancy. The method uses an analogy between the process of transition of a nonprimitive scheme from one state to another and the process of transmission of discrete info over a noisy channel. Hence, the reliability of the nonprimitive scheme can be raised by using the theory of self-correcting codes. The redundant nonprirnitive scheme synthesized by this method consists of an odd

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ACCESSION NR: AP4036511

number of nonredundant nonprimitive schemes whose delay outputs are connected to feedback inputs of each scheme via threshold elements. A general method for synthesizing an s-rank scheme is developed. Formulas for estimating the reliability of nonprimitive schemes consisting of limited-reliability elements are given. Orig. art. has: 4 figures and 28 formulas.

ASSOCIATION: none

SUBMITTED: 18Apr63 DATE ACQ: 03Jun64 ENCL: 00

SUB CODE: DP, IE NO REF SOV: 004 OTHER: 003

Card 2/2

BRAYNES, S.N.; SVECHINSKIY, V.B.

Models of some physiological adaptation processes on electronic
computers. Eksper. khir. i anest. 9 no.5:9-17 S-0 't4.
(MIRA 18:11)

1. Institut khirurgii imeni A.V. Vishnevskogo (direktor -
deystviteľnyy chlen AMN SSSR prof. A.A. Vishnevskiy) AMN
SSSR, Moskva.

L 04281-67 EWT(1) TG

ACC NR: AR6015980

SOURCE CODE: UR/0372/65/000/010/G010/G010

3/

B

AUTHOR: Svechinskiy, V. B.

TITLE: Possibilities for enhancing the reliability of discrete-action computing and control devices

SOURCE: Ref. zh. Kibernetika, Abs. 10G66

REF SOURCE: Tr. Mosk. energ. in-ta, vyp. 59, 1965, 245-252

TOPIC TAGS: computer reliability, discrete automaton, automaton, self organizing system

ABSTRACT: The problem of constructing a high-reliability automaton reduces to the following: given a structurally complete system of functional elements as well as transition and output tables of a discrete-action automaton, construct a self-correcting discrete-action s-rank automaton from elements of this system. The rank of the automaton is taken as the maximum number of any elements that may malfunction without disturbing the automaton's performance. It is shown that an increase in the rank leads to an increase in reliability. The synthesis of an automaton of the rank 1 is examined. 1 illustration. V. L. [Translation of abstract]

SUB CODE: 09, 12

Card 1/1 *SLH*

UDC: 62-507.019.3

L 07070-67 EWT(1) TG
ACC NR: AP6019232

(N)

SOURCE CODE: UR/0144/66/000/002/0200/0208

38
B

AUTHOR: Svechinskiy, V. B.

ORG: None

TITLE: Evaluation of reliability of discrete automatic machines with structural
redundancy

SOURCE: IVUZ. Elektromekhanika, no. 2, 1966, 200-208

TOPIC TAGS: automatic machine, discrete automation, electronic feedback, error
minimization

ABSTRACT: An analysis is made of the functioning of an automatic machine at discrete moments in time. The reliability of the elements of the automatic machine is characterized by the probability of failure in each cycle. This probability is considered to be independent of history. An element is suggested the feedback circuit for which consists of three independent paths with a majority selecting device, so that an error in functioning in one cycle is corrected in the next cycle. Non-correspondence of the states of the lines in a three-membered group indicates an error in one of the automatic devices making up this redundant automatic machine. This fact, plus the fact that failure of one automatic device does not result in an error in functioning of the entire redundant machine, allows failures to be located and corrected without interrupting the operation of the machine. Analysis conducted in this article shows

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UDC: 621.-52.019.3.

APPROVED FOR RELEASE: 08/31/2001

Card 2/2

ACC NR: AR6027181

SOURCE CODE: UR/0271/66/000/005/A056/A056

AUTHOR: Svechinskiy, V. B.

TITLE: A reliability criterion for processes controlled by automatic systems

SOURCE: Ref. zh. Avtomat telemekh i vychisl tekhn, Abs. 5A382

REF SOURCE: Sb. Avtomatiz. khim. i neftekhim. proiz-v. Vyp. 1. M., 1965, 3-12

TOPIC TAGS: system reliability, reliability engineering, reliability theory, automatic control parameter

ABSTRACT: The mathematical expectation of the cost of losses $M\{L(t)\}$ may be used as a criterion for evaluating the efficiency of technological processes under the control of a given discrete automatic control system. In this case, the system productivity may be said to increase when the losses caused by its suboptimal reliability are kept small. If it is assumed that the control system may realize a finite number (n) of algorithms (A_i) depending on its condition, then the average loss may be determined by

$$M\{L(t)\} = \sum_{i=0}^n p_i a_i,$$

where p_i is the probability that the system will be in the corresponding condition, and a_i is the mathematical expectation of losses incurred during the execution of

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UDC: 62-52.019.3:658.52.011.56

ACC NR: AR6027181

algorithms A_i . Then, the relative losses due to the suboptimal system reliability will be equal to:

$$\frac{M[L(t)] - a_0}{a_0}$$

where a_0 corresponds to an algorithm during normal system operation. This optimum reliability criterion may be used as a basis for the design of optimum control systems. By including the system cost and maintenance, the problem of finding the relationship between the reliabilities of different units and the overall size of the fixed structure control system may be reduced to the problem of finding the relative maximum of functions of many variables with constraints in the form of equations. The profit limits of the system may be defined with these relationships. The proposed method is illustrated by a design example where the cost/reliability indexes are calculated for a simple system of defense of a manufacturing facility against the effects of an explosion. A generalized method is presented for the case of possible system algorithms where it is necessary to analyze the corresponding probability density functions. [Translation of abstract] 2 illustrations and bibliography of 2 titles. B. A.

SUB CODE: 14

Card 2/2

ADAMASHVILI, Yu.D.; ZIMINA, K.Kh.; PLATONOV, V.A.; LIKHOVITSKIY, A.A.;
SAMAROV, A.V.; SVECHINSKIY, V.L.

Some problems in the planning of cities and settlements in districts
of the Far North and Northeast. Stroi. v raion. Vost. Sib. i Krain.
Sev. no.2:28-40 '62. (MIRA 18:7)

SVECHKAREV, I.V.

247600

82596

S/056/60/039/01/04/029
B006/B070

AUTHORS:

Aleksandrov, B. N., Verkin, B. I., Svechkarev, I. V.

TITLE:

The Temperature Dependence of the Susceptibility of Indium,
Lead, and Tin Crystals

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 1 (7), pp. 37-43

TEXT: The temperature dependence of the susceptibility of a number of elements is related directly to their position in the periodic system, that is with the presence of small electron groups and must, therefore, be characteristic of all elements which show a de Haas-van Alphen effect with large period. To test this hypothesis, the authors investigated the temperature dependence of the susceptibility of Pb, In, and Sn which crystallize in cubic or tetragonal forms. The samples investigated were of high purity and in the form of small spheres of 0.35-0.5 g weight. Determination of the principal values of susceptibility was done with the help of a modification of Faraday's balance method. Fig. 1 shows a scheme of the experimental arrangement and the position

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The Temperature Dependence of the Susceptibility S/056/60/039/01/04/029
of Indium, Lead, and Tin Crystals B006/B070

of the sample in the magnetic field. To eliminate the effect of the medium, the measuring apparatus is evacuated and filled with low pressure hydrogen. The apparatus and the experiment are very minutely described in the introduction. The measurements were made between room temperature and 20.4°K, where the liquids CH₄, O₂, N₂ and H₂ served as coolants. The observed values of $\chi_{||}$, χ_{\perp} and $\Delta\chi$ are compiled in a table, and compared with the results of other authors. The results are represented graphically in Fig. 2. Indium: $\chi_{\perp}(T)$ and $\Delta\chi(T)$ were measured for two samples and identical results were obtained. Fig. 2 shows $\chi_{\perp}(T)$ and the calculated values of $\chi_{||}(T)$. χ_{\perp} increases by 20% during a temperature drop of from room temperature to 80°K, goes to a maximum, comes down, and at 20.4°K still lies 15% higher than the value at room temperature. $\chi_{||}$ increases monotonously to 20°K reaching about thrice the value, and at ~100°K has a point of inflection. Lead: $\chi(T)$ and the anisotropy in the (110) plane were investigated for two samples. χ increases practically linearly with a fall of temperature and is 20% higher at 20.4°K.

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The Temperature Dependence of the Susceptibility S/056/60/039/01/04/029
of Indium, Lead, and Tin Crystals B006/B070

No anisotropy is observed. Tin: This shows a positive susceptibility. $\chi_1(T)$ was investigated along the normal to (010) plane, and $\Delta\chi(T)$ in the (100) plane. It was found that, in contrast to other elements of this group, $|\chi|$ decreases linearly with fall of temperature down to 20.4°K (χ_1 by 6% and χ_1 by 15%). These results are discussed in conclusion and are compared with the theoretical and experimental results of other authors (Fig. 2). G. Ye. Zil'berman and F. I. Itskovich are mentioned. There are 3 figures, 1 table, and 23 references: 9 Soviet, 4 British, 4 American, 1 German, 1 French, and 2 Dutch.

ASSOCIATION: Fiziko-tehnicheskiy institut Akademiya nauk Ukrainskoy SSR
(Physicotechnical Institute of the Academy of Sciences of
the Ukrainskaya SSR)

SUBMITTED: February 13, 1960

Card 3/3

9,4300(1137,1147,1158)
24,2200 1138, 1164, 1160, 1055

S/056/61/040/002/042/047
B102/B201

AUTHORS: Verkin, B. I., Dmitrenko, I. M., Svechkarev, I. V.

TITLE: Magnetic properties of beryllium at temperatures from
300 to 4.2°K

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki,
v. 40, no. 2, 1961, 670-671

TEXT: Studies of the magnetic properties of pure elements displaying a long-period de Haas - Van Alphen effect have involved examinations of pure beryllium single crystals, which are briefly discussed in the paper. Measurements were made by the Faraday method in the vertical gradient of fields up to 10 koe; photoelectric self-compensation was applied in the process (cf. B. V. Deryagin, DAN SSSR, 61, 275, 1948, or Hedcock, Phys. Rev. 104, 1564, 1956). Absolute measurements were accurate within ~2%, relative measurements within ~0.5%. The angular dependence of the magnetic susceptibility in the temperature range between 300 and 4.2°K was measured on two beryllium single crystal specimens (Be-1 and Be-2, ~99.99% pure), and two indium specimens (In-1 and In-2).

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B102/B201

Magnetic properties of beryllium ...

The result is presented in Fig. 1. Prior to the appearance of the de Haas - Van Alphen effect, the angular dependence of χ in Be can be described by the law $\chi(\theta) = \chi_0 \cos^2 \theta + \chi_1 \sin^2 \theta$ (solid curves in Fig. 1). The main values of susceptibility ($\chi_0 = 2.38 \cdot 10^{-6}$; $\chi_1 = 0.80 \cdot 10^{-6} \text{ cm}^3/\text{g}$) and their temperature dependence are in good agreement for both Be specimens. The character of the growth of $|\chi_1|$ with temperature can be explained by the contribution made by the paramagnetism of a small group of electrons (or holes). In analogy to most of the elements studied previously, anisotropy decreases with growing temperature, and the temperature-dependent component of susceptibility has an asymptotic approach to the temperature-independent (or poorly dependent) component. χ_1 in beryllium displays not only a temperature dependence, but, already at $\sim 20^\circ\text{K}$, a periodic field dependence as well, which is indicative of the fact that, as applies also to other elements, the phenomena are associated with the existence of small groups of mobile charges. For indium specimens $\chi(\theta)$ also follows the cosine law (Fig. 1). Although both specimens were made of the same initial material,

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Magnetic properties of beryllium ...

S/056/61/040/002/042/047
B102/B201

deviations appeared in the absolute values of χ . This is probably due to the existence of small amounts of impurities having an appreciable effect in In as well as in Bi and Sb. The strong anisotropy of this metal is said to be probably caused entirely by a small group of carriers, which does not manifest itself in electric or galvanomagnetic properties. Professor B. F. Lazarev is thanked for having permitted work to be conducted at the low-temperature laboratory of the FTI AN USSR (Institute of Physics and Technology, AS UkrSSR), and A. A. Kruglykh for having supplied the Be single crystals. [Abstracter's note: The word laboratoriya (laboratory) seems to be omitted in the "Association".] There are 2 figures and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Fiziko-tehnicheskiy institut nizkikh temperatur Akademii nauk Ukrainskoy SSR (Institute of Physics and Technology for Low Temperatures, Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: September 14, 1960

Card 3/4

SVECHKAREV, I.V.

Balance with automatic compensation for susceptibility
measurement. Prib. i tekhn. eksp. 8 no.4:142-143 J1-Ag '63.
(MIRA 16:12)
1. Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR.

ACCESSION NR: AP4043609

S/0056/64/047/002/0404/0413

AUTHORS: Verkin, B. I.; Svechkarev, I. V.

TITLE: Magnetic properties of indium alloys. I. Solid solutions
of Cd, Sn, and Pb in In

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 2, 1964, 404-413

TOPIC TAGS: magnetic susceptibility, electron spectrum, indium
alloy, valence, diamagnetism, solid solution, cadmium, tin, lead

ABSTRACT: The purpose of the investigation was to clarify whether
investigation of the magnetic susceptibility as a function of the
temperature and of the valence can be used to study the fine details
of the electron spectrum. This investigation includes the deter-
mination of the adequacy of the Landau-Peierls approximation for de-
scribing the susceptibility in the case of alloys of a normal multi-
valent metal (in contradistinction to the semimetal bismuth), and

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ACCESSION NR: AP4043609

the extraction, on the basis of this approximation, of the maximum information about the spectrum and its variation under the influence of the impurities. Indium was chosen because it has a well-defined magnetic-susceptibility temperature dependence in a convenient temperature range and forms a wide range of solid solutions with its closest neighbors in the periodic table. The magnetic susceptibility variation was investigated in the temperature in the range from 20.4 to 300K and valence range from 2.95 to 3.10. The results show that the temperature dependence susceptibility of indium alloys cannot be successfully described by the Landau-Peierls contribution. It is more natural to attribute the diamagnetism to a contribution arising from virtual transitions between bands, separated by a small energy gap (Adams contribution). The anomalous diamagnetism of indium disappears when Z is increased by 2%. Information on the electron structure of indium alloys can be obtained on the basis of the Adams contribution of inter-band interactions. These contributions can be expected to appear in frequent cases (for

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example, in cadmium). "The authors thank N. V. Volkenshteyn and S. S. Shaly*t for permitting part of this work to be performed in their laboratories, to the staff members of the laboratory for assistance, to their colleagues at FTINT AN UkrSSR for preparation of the samples, B. N. Aleksandrov for a number of pure metals, and G. Ye. Zil'berman and F. I. Itskovich for a discussion of the results and valuable advice." Orig. art. has: 6 figures and 6 formulas.

ASSOCIATION: Fiziko-tehnicheskiy institut nizkikh temperatur Akademii nauk Ukrainskoy SSR (Physicotechnical Institute of Low Temperatures, Academy of Sciences, Ukrainian SSR)

SUBMITTED: 22Feb64

ENCL: 00

SUB CODE: SS

NR REF SOV: 011

OTHER: 013

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L 11949-65

EWI(m)/EWP(t)/EWP(b) AS(mp)-2/ASD(a)-5 RDW/JD/JG

ACCESSION NR: AP4046393

S/0056/64/047/003/0817/0824

AUTHORS: Svechkarev, I. V.; Verkin, B. I.; Kuz'micheva, L. B.

TITLE: Magnetic properties of indium alloys. II. Solid solutions
of Tl and Ga in In. The Beta phase of In and Sn alloysSOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,
no. 3, 1964, 817-824TOPIC TAGS: indium alloy, solid solution, beta phase, magnetic
susceptibility, crystal lattice distortion, diamagnetic suscepti-
bility, interband interactionABSTRACT: This is a continuation of an earlier paper (ZhETF v. 47,
No. 8, 1964) which dealt with the variation of the susceptibility
of indium alloyed with elements that change the conduction-electron
density (cadmium, tin, and lead). In the present article the authors
report a study of the susceptibility of indium as a function of the

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isovalent impurities Tl and Ga, which do not alter the total electron density but distort the lattice. The results confirmed the suggestion made in the first article that a considerable role is "played in the anomalous diamagnetism of indium by the interband interactions. The possible changes produced in the electron spectrum of indium by the introduction of the isovalent impurities is also considered. A possible mechanism of the effective isovalent impurities on the spectrum of indium is discussed. The anomalous magnetism of indium disappears in the cubic phase of the In-Tl alloys (>25 at.% Tl) and in the β phase of In-Sn alloys (25-30 at.% Sn). The properties of these alloys are close to those predicted by the Landau-Peierls theory although many difficulties still remain in attempting to fit the experimental data to this theory. "In conclusion, the authors thank N. V. Volkenshteyn for permitting part of this work to be carried out in his laboratory, R. N. Antuf'yeva for the preparation and x-ray analysis of some samples, and V. A. Verbitskiy for help with the measurements." Orig. art. has 9 figures.

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ACCESSION NR: AP4046393

ASSOCIATION: Fiziko-tehnicheskiy institut nizkikh temperatur
Akademii nauk UkrSSR (Physicotechnical Institute of Low Temperatures,
Academy of Sciences UkrSSR)

SUBMITTED: 01Apr64

ENCL: 00

SUB CODE: SS, MM

NR REF SOV: 005

OTHER: 006

Card 3/3

L 6763-65 EWT(m)/EXP(q)/EXP(b) IJP(c)/ISB(a)-5/AS(mp)-2/ESD(t)/RAFM(t)

JD

ACCESSION NR: AP4046414

S/0056/64/047/003/0960/0963

52
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AUTHOR: Svechkarev, I. V.

TITLE: Lattice periods and electronic structure of indium alloys

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,
no. 3, 1964, 960-963

TOPIC TAGS: indium alloy, crystal lattice constant, crystal lattice period, electron structure, Brillouin zone

ABSTRACT: Under the assumption that the actual change in the lattice periods, following introduction of an impurity in an alloy, is determined by all the Brillouin-zone faces and is most strongly governed by the lattice-constant ratio c/a in anisotropic lattices, the author examines the behavior of this ratio in tetragonal indium alloys in the α and β phases, in which the c/a ratio is determined by the average valence of the atoms. The model of almost free electrons is used

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as the starting point. It is shown that the Fermi surface overlaps all faces of the first Brillouin zone and, depending on the phase of the alloy, it is almost tangent to the non-equivalent corners of the zone, making the c/a ratio dependent on the character of occupation of the states in these corners. Information is obtained on the singularities of the electron structure and the energy gaps of indium alloys. In the indium alloy α phase the first Brillouin zone is completely occupied, and the corner states begin to become occupied in the valence range between 2.98 and 3.06. In the β phase, in the valence range from 2.95 to 2.98, the changes in the lattice apparently stabilize the character of occupation of the corners farthest away from the center of the Brillouin zone. Other factors affecting the c/a ratio are also discussed briefly. "The author thanks B. I. Verkin for interest and attention." Orig. art. has: 1 figure.

ASSOCIATION: Fiziko-tehnicheskiy institut nizkikh temperature Aka-

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L 6763-65

ACCESSION NR: AP4046414

demii nauk Ukrainskoy SSR (Physicotechnical Institute of Low Temperatures, Academy of Sciences, Ukrainian SSR)

SUBMITTED: 16Mar64

ENCL: 00

SUB CODE: SS

NR REF Sov: 003

OTHER: 012

Card 3/3

L 12149-66 EWT(1)/EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) JD
ACC NR: AF6002463 SOURCE CODE: UR/0386/65/002/011/0501/0502
AUTHOR: Svechkarev, I. V.; Panfilov, A. S.
ORG: Physicotechnical Institute of Low Temperatures, Academy of Sciences, UkrSSR,
Khar'kov (Fiziko-tehnicheskiy institut nizkikh temperatur Akademii nauk UkrSSR)
TITLE: Effect of pressure on the magnetic susceptibility of manganese and scandium
SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.
Prilozheniya, v. 2, no. 11, 501-502
TOPIC TAGS: magnetic susceptibility, pressure effect, manganese, scandium, paramagnetism, magnetic field

ABSTRACT: In view of the fact that serious technical difficulties have hitherto hindered investigations of the variations of the susceptibility $\chi_{sp}(P)$ of weakly-magnetic metals and their alloys, the authors made a direct study of the behavior of $\chi_{sp}(P)$ near room temperature using a method wherein the sample was freely suspended in a magnetic field at a hydrostatic pressure up to 2000 atm. The preliminary measurement results obtained during the trials of the method on manganese and scandium are shown in the figure. The obtained values of $\kappa = (1/\chi_{sp}^0)(\partial\chi_{sp}/\partial P)$ are $\kappa_{Mn} = -9.6 \times 10^{-6} \text{ atm}^{-1} \pm 20\%$ and $\kappa_{Sc} = -1.3 \times 10^{-6} \text{ atm}^{-1} \pm 40\%$. An analysis of

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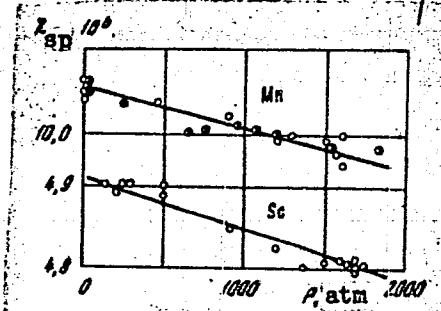
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ACC NR: AP6002463

the sources of errors and their estimate will be published in the near future in connection with a more detailed description of the method. Since the state density per atom on the Fermi boundary of the investigated metals is quite high, it is possible to attribute their paramagnetism to the Pauli contribution. For one parabolic band, κ is then expressed simply in terms of the compressibility ($\kappa = 2k/3$), amounting to -0.53×10^{-6} and $-1.4 \times 10^{-6} \text{ atm}^{-1}$ for manganese and scandium, respectively, or one order of magnitude lower than the measured values. This indicates that some uncertainty in the obtained results does not prevent their use for more detailed analyses. Authors are grateful to B. I. Verkin for interest and attention, and to V. V. Yeremenko and L. Ye Danilenko for graciously supplying the metal samples. Orig. art. has: 1 figure. 04/55

SUB CODE: 20/ SUBM DATE: 16Oct65/ ORIG REF: 601/ OTH REF: 004/

Card 2/2 HW



$\chi_{sp}(P)$ of electrolytic manganese (different values correspond to two samples of one material) and scandium (polycrystal).

L 32968-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG
ACC NR: AT6015897 (N) SOURCE CODE: UR/0000/65/000/000/0100/0102

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Bt1

AUTHOR: Antuf'yeva, R. N.; Svechkarev, I. V.

ORG: Physico-Technical Institute for Low Temperatures, AN UkrSSR (Fiziko-tehniches-
kiy institut nizkikh temperatur AN UkrSSR)

TITLE: Lattice periodicity of indium alloyed with gallium

SOURCE: AN UkrSSR. Issledovaniye energeticheskogo spektra elektronov v metallakh
(Study of the energy spectrum of electrons in metals). Kiev, Izd-vo Naukova dumka,
1965, 100-102

TOPIC TAGS: indium alloy, crystal lattice parameter, semiconductor theory, electron
donor, Brillouin zone, metal physics, gallium

ABSTRACT: X-ray lattice parameter measurements on indium-gallium alloys (to 2.5 at %
Ga) were made. For the face-centered tetragonal structure, the c/a ratio increased
from 1.0745 Å to 1.0770 Å for 2.5 at % Ga. The parameter ' a ' decreased from 4.597 Å to
4.590 Å, while the parameter ' c ' remained constant at 4.940 Å. The 'compressive' ef-
fect of gallium on the indium lattice is typical of donor impurities, while the oppo-
site is true of acceptor impurities such as Li, Mg, Cd and Hg. Gallium decreased the
energy gap and increased the filling of corner states in the Brillouin zones. A compari-
son was made with thallium--an isovalent impurity, known to change the local electron

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ACC NR: AT6015897

concentrations in the corners of the third zones. For equivalent numerical c/a changes with opposite signs ($\text{Ga}-- +1.1 \cdot 10^3$ and $\text{Th}-- -1.1 \cdot 10^3$), the changes in energy gaps depended not so much on the changes in the volume of the lattices as on the ionic potentials of the impurities. The change in energy gap with pressure was calculated ($\frac{\partial E_g}{\partial P} = -1.3 \cdot 10^{-6}$ ev/atm) from the dependence $c/a = f(Z)$ and the known density of states of indium, which compared well with the same values for semiconductors. Orig. art. has: 1 figure, 1 table.

SUB CODE: 20,11/ SUBM DATE: 12Nov64/ ORIG REF: 006/ OTH REF: 006

Card 2/2

L13522-00	REF(m)/T/EP(t)/ETL	LIP(z) . IN
ACC NR:	AP6018824	SOURCE CODE: UR/0056/66/050/005/1438/1444
AUTHOR: Verkin, B. I.; Svechkarev, I. V.; Kuz'micheva, L. B.		
ORG: Physicotechnical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR (Fiziko-tehnicheskiy institut nizkikh temperatur Akademii nauk Ukrainskoy SSR)		
TITLE: Magnetism of conduction electrons of nontransition polyvalent metals		
SOURCE: Zh eksper i teor fiz, v. 59, no. 5, 1966, 1438-1444		
TOPIC TAGS: conduction electron, magnetic susceptibility, temperature dependence, magnetism, electron structure, polyvalent metal		
ABSTRACT: A comparison of temperature dependences of magnetic susceptibility with the Landau—Peierls theory shows that it does not describe the experimental date for polyvalent nontransition metals. The magnetism of these metals can be explained on the basis of qualitative considerations regarding the contribution		
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ACC NR: AP6018824

of interband interaction. In particular, the temperature dependences of the susceptibility, seen in the two-band model, explain all the modifications in pure metals and alloys, in accordance with the electron structural features. Orig. art. has: 2 figures and 1 table. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 23Dec65/ ORIG REF: 009/ OTH REF: 023/

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